CORTEZ III SERVICE CORPORATION
NASA/GODDARD SPACE FLIGHT CENTER
CODE 239, BLDG 27
GREENBELT, MD 20771
FAX (301) 286-1774

DATE: Jan. 23, 2001 _____ **#PAGES (including cover sheet)**

TO: Stanley R. Schneider
AT: NPOESS Integrated Program Office
PHONE (VOICE/FAX)_____

FROM: ODELL YOUNG, IMPORT/EXPORT SPECIALIST
PHONE: (301) 286-6388
EMAIL: oyoung@pop200.gsfc.nasa.gov

IF YOU DO NOT RECEIVE ALL TRANSMITTED SHEETS, PLEASE CALL
(301) 286-6388

Comments:

REF: Dept. of State Case Nos. 0017-01, 0039-01, 0041-01

Please review and determine if the attached agreements accurately represent the Program. A reply is requested within ten days referencing each case number. Reply *by email is preferrable.* Please include your concurrence and any comments.

Odell Young

Patty Manlove 301 286 4579

DTC CASE REFERRAL DOCUMENT

ADMIN USE	DATE STAFFED	DTC CASE NUMBER
MC	JAN - 5 2001	TA 0017-01

APPLICANT: Harris Corporation

	Advisory Opinion	X	Agreement - [Mfg], [Tech Assist],]Distribution]		Brokering Request

DTC CASE OFFICER: LtCol DeSilva
DTC Comments:

Recommendations and Comments Are Requested From:

X	DTRA/LD		NEA/RA		DRL/MLA	✓	Transmittal Letter
						✓	Attachments, stated on appl
X	NASA		EAP/RSP		OES		Tech data/Descrip Literature
							Statement of Work
	ENERGY		EUR/RPM		PM/RSAT		Order/Ltr of Intent/Contract
							Copy of Agreement
	DOT/USCG		AF/RA		NP/CBM	✓	Copy of previous Approvals
							End Use Certificate/DSP-83
	COMMERCE		WHA/PPCP		DTC/CEB		Import Authorization
							Other (videocassette, etc.)
	L/PM		SA/RA		DTC/		Nothing
						7	# of Collated Sets
	PKRC		EUR/PRA	X	PM/ECNP		

REPLY HERE AND RETURN TO DEPARTMENT OF STATE, OFFICE OF DEFENSE TRADE CONTROLS, WASHINGTON, D.C. 20520-0206. Recommendations within 25 working days of date staffed are appreciated. **PROVIDE COMMENTS FOR ANY RECOMMENDATION TO DENY OR RETURN WITHOUT ACTION (RWA).**

RECOMMENDATION & COMMENTS:

	APPROVE		APPROVE *WITH* PROVISO		RWA		DENY

COMMENTS:

Typed/Printed NAME AND OFFICE SYMBOL SIGNATURE

DATE: Telephone Number:

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	L/PM		SA/RA		DTC/		Nothing
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RECOMMENDATION & COMMENTS:

	APPROVE		APPROVE *WITH* PROVISO		RWA		DENY

COMMENTS:

Typed/Printed NAME AND OFFICE SYMBOL SIGNATURE

DATE: Telephone Number:

Proposed
TECHNICAL ASSISTANCE AGREEMENT

BETWEEN

HARRIS CORPORATION

and

SAAB-ERICSSON SPACE AB, Sweden,

and

AUSTRIAN AEROSPACE, Austria

Prepared 21 December 2000 by

Harris Corporation

Melbourne, Florida

PM/DTC Registrant/Applicant Code: 0501-3664

HARRIS

HARRIS CORPORATION

Corporate Headquarters
1025 West NASA Boulevard
Melbourne, FL USA 32919
phone 321.727.9220
fax 321.727.9636
email bartlett@harris.com

www.harris.com

PM/DTC Registrant Code
0501-3664

20 December 2000

Mr. William J. Lowell, Director
Office of Defense Trade Controls
PM/DTC, SA-1, 13th Floor
U.S. Department of State
2401 E Street, N.W.
Washington, DC 20037

Subject: Proposed TAA between Harris Corporation, SAAB-Ericsson Space, and Austrian Aerospace for the National Polar-orbiting Operational Environmental Satellite System (NPOESS).

Submitted herewith are seven copies of this letter and eight copies of a proposed Technical Assistance Agreement, collated into eight sets, between the Harris Corporation, through its Government Communications Systems Division ("Harris"), a U.S. corporation, SAAB-Ericsson Space AB ("SAAB"), of Sweden, and Austrian Aerospace ("Austrian Aerospace"), of Austria, for the transfer of certain technical information and assistance necessary for the implementation of the National Polar-orbiting Operational Environmental Satellite System (NPOESS).

Harris GCSD is a sub-contractor to Lockheed Martin Missiles & Space ("LMMS") for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Program. LMMS is under contract (Number F04701-00-C-0501) with the US Government's Integrated Program Office (IPO), which is comprised of U.S. Department of Commerce, NASA, and U.S. Department of Defense representatives. The LMMS Prime contract is for the Program Definition and Risk Reduction (PDRR) phase of the NPOESS Program. The IPO has two PDRR prime contractors, LMMS and TRW.

LMMS desires to exchange technical data and provide defense services to SAAB and Austrian Aerospace relating to (1) the requirements to integrate the Global Positioning System Occultation Sensor (GPSOS) onto the LMSS baseline satellite for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and (2) the requirements to evaluate the performance of the algorithms for the retrieval of environmental parameters.

SAAB is under contract with the IPO to provide both the GPSOS and its retrieval algorithms for environmental parameters, and Austrian Aerospace is under a sub-contract to SAAB to help in the development of the hardware for the GPSOS.

It is the intent of the IPO to provide the GPSOS to the contractor (either LMMS or TRW) selected for the Engineering and Manufacturing Development phase of NPOESS. The EMD contractor (either LMMS or TRW) will by necessity share

information with their subcontractors (Harris GCSD or Raytheon) for the Interface Data Processor Segment (IDPS) development and support. Therefore SAAB and Austrian Aerospace have to receive technical data and defense services related to the integration of the GPSOS and its retrieval algorithms onto the LMMS baseline satellite designed for NPOESS

The following information is provided as required by 22 CFR 124.12:

(a)(1) The DTC applicant code is: 0501-3664

(a)(2) The licensees are SAAB-Ericcson AB (hereinafter referred to as "SAAB") whose office is situated at S-405 15 Göteberg, Sweden, and Austrian Aerospace whose office is situated at Bretenfurter Strasse 106-108, A-1120 Vienna, Austria. The scope of this agreement entails Harris Corporation disclosing unclassified technical data to SAAB and Austrian Aerospace related to use of retrieval algorithms for environmental parameters. This Agreement is valid through 31 December 2008.

(a)(3) Harris has executed numerous space programs for U.S. Air Force and NASA customers which have content similar in nature to that being procured for the NPOESS Program. With regard to the retrieval algorithms, Harris has taken environmental parameter retrieval algorithms and used them so that meaningful weather information can be processed and displayed.

(a)(4) All data to be transferred will be unclassified.

(a)(5) There are no patent applications which disclose any of the subject matter of the equipment or technical data covered by an invention secrecy order issued by the U.S. Patent and Trade Office.

(a)(6) Harris is supplying an estimated value of $20,000,000 over the eight (8) year validity period of this agreement. This estimate is based upon the proposals submitted for the baseline and any additional options which could be exercised over the term of the contract. No political contributions, fees, or commissions have been paid pursuant to ITAR Part 130. No offset agreement is proposed to be entered into in connection with the agreement.

(a)(7) There will be no foreign military sales, credits or loan guarantees involved in financing the Agreement.

(a)(8) There will be no classified data transferred under this Agreement.

(a)(9) Not applicable. (No classified data transferred under this Agreement.)

(b)(1) If the Agreement is approved by the Department of State, such approval will not be construed by Harris as passing on the legality of the Agreement from the standpoint of antitrust laws or other applicable statutes, nor will Harris construe

the Department's approval as constituting either approval or disapproval of any of the business terms or conditions between the parties to the Agreement.

(b)(2) Harris will not permit the proposed Agreement to enter into force until it has been approved by the Department of State.

(b)(3) Harris will furnish the Department of State with one copy of the signed Agreement within 30 days from the date that the Agreement is concluded and will inform the Department of its termination not less than 30 days prior to the expiration and provide information on the continuation of any foreign rights or the flow of technical data to the foreign party. If a decision is made not to conclude the proposed Agreement, Harris will so inform the Department within 60 days.

(b)(4) If this Agreement grants any rights to sub-license, it will be amended to require that all sub-licensing agreements incorporate all the provisions of the basic Agreement that refer to the U.S. Government and the Department of State (i.e., 22 CFR 124.9 and 124.10).

To facilitate U.S. Government consideration of this request, the Agreement contains the following provisions currently required by the ITAR:

Pursuant to 22 CFR 124.7:

CFR Section	Agreement Reference
124.7(1)	Section I, paragraph 1, page 3
124.7(2)	Section I, paragraph 2, page 3
124.7(3)	Section I, paragraph 3, page 3
124.7(4)	Section I, paragraph 4, page 3

Pursuant to 22 CFR 124.8:

CFR Section	Agreement Reference
124.8(1)	Section II, paragraph 1, page 4
124.8(2)	Section II, paragraph 2, page 4
124.8(3)	Section II, paragraph 3, page 4
124.8(4)	Section II, paragraph 4, page 4
124.8(5)	Section II, paragraph 5, page 4
124.8(6)	Section II, paragraph 6, page 4.

No defense articles will be shipped in furtherance of this agreement. Only technical data in the form of assembly specifications for units under consideration for procurement will be provided.

This agreement relates to U.S. Munitions List Category XV – Spacecraft Systems and Associated Equipment. This category is not designated as Significant Military Equipment (SME).

Harris Corporation has retained the law firm of Holland & Knight, LLP, Washington, DC, to represent Harris regarding this matter. Harris Corporation authorizes Ronald A. Oleynik, Esq., or any other attorney from the Holland & Knight to act as our agent with respect to related ODTC licensing issues. If you should have any questions or require additional information concerning this Agreement, please contact me at (321) 727-9220.

Sincerely,

James E. Bartlett III
Senior Counsel
Director, Export/Import Compliance

Enclosures:
Eight copies of Proposed TAA,
including Letter of Transmittal and Certification Letter per ITAR 126.13

HARRIS

HARRIS CORPORATION

Corporate Headquarters
1025 West NASA Boulevard
Melbourne, FL USA 32919
phone 321.727.9220
fax 321.727.9636
email bartlett@harris.com

DTC Applicant Code 0501-3664

21 December 2000

Mr. William J. Lowell
Director
Office of Defense Trade Controls (PM/DTC)
U.S. Department of State
2401 E Street, NW, Annex SA-1
Washington, D.C. 20037

Dear Mr. Lowell:

I, the undersigned, am a U.S. person as defined in 22 C.F.R § 120.15, and I am a responsible official empowered by Harris Corporation to certify the following in compliance with 22 C.F.R. § 126.13:

1. Neither Harris, its chief executive officer, president, vice presidents, other senior officers or officials (e.g., comptroller, treasurer, general counsel) nor any member of the board is:

a. the subject of an indictment for or has been convicted of violating any of the U.S. criminal statutes enumerated in 22 C.F.R. § 120.27 since the effective date of the Arms Export Control Act, Public Law 94-329, 90 Stat. 729 (June 30, 1976); or

b. ineligible to contract with, or to receive a license or other approval to import defense articles or defense services from, or to receive an export license or other approval from any agency of the U.S. Government;

2. To the best of my knowledge, no party to the export as defined in Section 126.7(e) has been convicted of violating any of the U.S. criminal statutes enumerated in 22 C.F.R. § 120.27 since the effective date of the Arms Export Control Act, Public Law 94-329, 90 Stat. 729 (June 30, 1976) or is ineligible to contract with, or to receive a license or other approval to import defense articles or defense services from, or to receive an export license or other approval from any agency of the U.S. Government, and

3. The natural person signing the application for the license or other request for approval is a responsible official who has been empowered by Harris and is a citizen of the United States.

Because the enclosed TAA application proposes only the provision of technical data and defense services, but no export of defense items, no list of consignors, freight forwarders, consignees, and intermediate consignees is enclosed.

Respectfully submitted,

James E. Bartlett III

JAMES E. BARTLETT III
SENIOR COUNSEL
DIRECTOR, EXPORT/IMPORT COMPLIANCE

Enclosure 1.

Technical Assistance Agreement

TECHNICAL ASSISTANCE AGREEMENT

BETWEEN

HARRIS CORPORATION, GOVERNMENT COMMUNICATIONS SYSTEMS DIVISION

AND

SAAB-ERICSSON SPACE AB, Sweden,

AND

AUSTRIAN AEROSPACE, Austria

This Agreement is entered into between Harris Corporation a corporation of the State of Delaware, for its Government Communications Systems Division (hereinafter referred to as "HGCSD") with offices at 150 South Wickham Road, P.O. Box 37, Melbourne, Florida, United States of America, 32902-0037, and Saab-Ericsson AB (hereinafter referred to as "Saab") whose office is situated at S-405 15 Göteberg, Sweden, and Austrian Aerospace whose office is situated at Bretenfurter Strasse 106-108, A-1120 Vienna, Austria, and is effective upon the date of signature of the last party to sign the Agreement. LMMS, Saab, and Austrian Aerospace are hereinafter referred to as the Parties.

WHEREAS, Lockheed Martin Missiles & Space ("LMMS") is under contract (Number F04701-00-C-0501) with the Integrated Program Office comprised of Department of Commerce, NASA and the Department of Defense (see Statement of Work), and

WHEREAS, HGCSD is a sub-contractor to LMMS for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Program, and

WHEREAS, LMMS desires to exchange technical data and provide defense services to Saab and Austrian Aerospace relating to (1) the requirements to integrate the Global Positioning System Occultation Sensor (GPSOS) onto the LMSS baseline satellite for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and (2) the requirements to evaluate the performance of the algorithms for the retrieval of environmental parameters, and

WHEREAS, the IPO will obtain their own import and export licensing from the Department of State as required, and

WHEREAS, Saab is under contract with the IPO to provide both the GPSOS and its retrieval algorithms for environmental parameters, and

WHEREAS, Austrian Aerospace is under a sub-contract to Saab to help in the development of the hardware for the GPSOS, and

WHEREAS, it is the intent of the IPO to provide the GPSOS to the contractor (LMMS or TRW) selected for the Engineering and Manufacturing Development phase of NPOESS, and

WHEREAS, the EMD contractor (LMMS or TRW) will by necessity share information with their subcontractors (HGCSD or Raytheon) for the Interface Data Processor Segment (IDPS) development and support, and

WHEREAS, Saab and Austrian Aerospace desire to receive technical data and defense services related to the integration of the GPSOS and its retrieval algorithms onto the LMMS baseline satellite designed for NPOESS,

NOW THEREFORE, the parties desire to enter into this Technical Assistance Agreement as follows:

1. This Technical Assistance Agreement is intended to enable HGCSD to support LMMS to perform defense services and disclose technical data during the Program Definition and Risk Reduction (PDRR) Phase in support of the requirements to develop processing approaches for the GPSOS sensor data and to evaluate the requirements for the retrieval of environmental parameters from the GPSOS.

There are several phases to the NPOESS program.

(i) The Development of Environmental Sensors

Beginning in 1997, the IPO issued contracts for the development of five major sensors that are to be integrated on future NPOESS satellites. An important element of the contracts is the ultimate delivery to the IPO of the sensor plus algorithms that allow environmental parameters to be retrieved from the remotely-sensed data. One of the contracts is with Saab for the development of the GPSOS and its retrieval algorithms. Saab and its subcontractor, Austrian Aerospace, will continue the development of the GPSOS during the current Phase of their contract which extends with options beyond 2005.

(ii) The Program Definition and Risk Reduction

LMMS is currently under contract - number #F04701-00-C-0501 - with the IPO. The contract is for the NPOESS Program Definition and Risk Reduction (PDRR) phase to provide a single, national polar-orbiting remote sensing capability to acquire, receive, and disseminate global and regional environmental data. HGCSD is a subcontractor to LMMS for the NPOESS Program. A similar competitive PDRR contract was awarded to TRW by the NPOESS IPO, and a down-select contract will be awarded to either LMMS or TRW for the Engineering and Manufacturing Development (EMD)/Production phase of the NPOESS program. One element of the PDRR contract is to reduce the risk of integrating the five NPOESS sensors, including GPSOS, onto the baseline of the LMMS satellite. Further, the PDRR phase contractors/subcontractors have been specifically tasked to reduce the risk of processing the data obtained from these sensors into usable meteorological products. The PDRR phase will end on 30 March 2002 or, if an option to the contract is exercised, on 31 December 2002.

The primary exchange of information to be carried out under this TAA will take place during the PDRR phase of the NPOESS program - namely from 1 March 2000 through 31 December 2002. The exchange of data includes the requirements for (1) spacecraft to GPSOS instrument interface specifications, (2) test plans and procedures specific to the GPSOS interface and instrument performance, and (3) interface drawings and analysis for instrument specific mechanical, thermal, electrical, data processing, flight software and fields-of-view analysis (optical, radio frequency, and thermal). In addition, details relative to the theory, supporting software, and the expected

performance of the algorithms to retrieve environmental parameters using data from the GPSOS is required information to be provided by Saab to LMMS.

(iii) The Engineering and Manufacturing Development (EMD)/Production

The next phase in the NPOESS program, the EMD/Production, will call for the building of three satellites with an option to build four additional satellites. Although the sensor complement for each of the satellites is variable, the plan is to incorporate a GPSOS sensor on each of the seven NPOESS satellites. At an early stage in the EMD/Production phase, the IPO will transfer the responsibility for the operation, maintenance, upgrading, and performance of the sensors to the successful EMD/Production contractor; i.e. either LMMS or TRW. If selected for the EMD phase, LMMS and HGCSD will amend their respective TAA's to accommodate these additional tasks.

2. It is understood that this Technical Assistance Agreement is entered into as required under U.S. Government regulations and, as such, it is an independent agreement between the parties, the terms of which will prevail, notwithstanding any conflict or inconsistency that may be contained in other arrangements between the Parties on the subject matter.

3. The parties agree to comply with all applicable sections of the International Traffic in Arms Regulations (ITAR) of the U.S. Department of State and that, more particularly, in accordance with such regulations the following conditions apply to this Agreement:

I. ITAR 124.7

(1) Data to be exchanged includes that necessary to integrate a GPSOS instrument and its retrieval algorithms with an NPOESS baseline spacecraft. In addition, all data necessary to process the GPSOS data within the IDPS will be included. Such data include the requirements for (1) spacecraft to instrument interface specifications, (2) test plans, procedures and resulting data specific to the instrument interface and instrument performance, and (3) interface drawings and analysis for instrument specific mechanical, thermal, electrical, data processing, flight software and fields-of-view analysis (optical, radio frequency, and thermal) (4) algorithm theoretical basis document(s) and explanations as required (5) GPSOS output data for use in independent testing and software optimization for IDPS development (see attachment A, Statement of Work).

All technical data and defense services transferred by Saab and Austrian Aerospace to HGCSD under this agreement pertains solely to the performance of retrieval algorithms and the interface between the LMMS architecture of the baseline spacecraft and the GPSOS instrument and does not represent a transfer of technical data or defense services specific to the design, manufacture, assembly or test of the NPOESS spacecraft itself. HGCSD will transfer to Saab and Austrian Aerospace software interface specifications pertaining to GPSOS specific flight software data processing and ground support. No HGCSD software code or algorithms will be exchanged.

As currently envisioned, HGCSD does not anticipate any requirement to export HGCSD owned hardware in connection with this agreement however, a GPSOS instrument and associated Saab- owned special test equipment may be returned to the NPOESS IPO.

(2) The technical assistance and data to be provided under this agreement includes all tasks associated with (1) the requirements for the GPSOS algorithms for the retrieval

of environmental parameters, and (2) the specifications for receiving, inspecting, bench level testing, installing on the baseline spacecraft, aligning on the baseline spacecraft, functionally verifying the instrument-to-spacecraft interface via spacecraft level testing and storing. Additionally, HGCSD and LMMS will assist Saab in establishing the methodology for the review of instrument level and spacecraft level interface test data and anomaly resolution as required.

(3) The agreement is valid through 31 December 2008.

(4) The effort intended to be accomplished under this agreement will take place in Sweden, Austria, or the United States of America. There is no other country or area in which manufacturing, processing, sale or other form of transfer is to be licensed.

II. ITAR 124.8

(1) This Agreement shall not enter into force and shall not be amended or extended without the prior written approval of the Department of State of the U.S. Government.

(2) This Agreement is subject to all United States laws and regulations relating to exports and to all administrative acts of the U.S. Government pursuant to such laws and regulations.

(3) The Parties to this Agreement agree that the obligations contained in this Agreement shall not affect the performance of any obligations created by prior contracts or subcontracts which the Parties may have individually or collectively with the U.S. Government.

(4) No liability will be incurred by or attributed to the U.S. Government in connection with any possible infringement of privately owned patent or proprietary rights, either domestic or foreign, by reason of the U.S. Government's approval of this Agreement.

(5) The technical data or defense service exported from the United States in furtherance of this Agreement and any defense article which may be produced or manufactured from such technical data or defense service may not be transferred to a person in a third country or to a national of a third country except as specifically authorized in this Agreement unless the prior written approval of the Department of State has been obtained.

(6) All provisions in this Agreement which refer to the United States Government and the Department of State will remain binding on the Parties after the termination of the Agreement.

4. It is understood that disclosure of information by Saab to HGCSD is subject to any rules, restrictions or laws of Sweden. It is understood that disclosure of information by Austrian Aerospace to HGCSD is subject to any rules, restrictions or laws of Austria.

5. Technical data relating to this program may be exchanged with Saab and/or Austrian Aerospace contractors/subcontractors provided that, prior to the release of any technical data, Saab executes a Non-Disclosure Agreement (NDA) with each company. The NDA will incorporate all of the provisions of the basic Agreement which refer to the U.S. Government and the Department of State (i.e., 22 CFR 124.8 and/or 124.9). Copies of the executed NDA's referencing this Agreement by number will be provided to and maintained by HGCSD for five years from the expiration of the Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed effective as of the day and year above provided.

Harris Corporation

By _____

Printed Name _____

Title _____

Date _____

Saab-Ericsson Space AB

By _____

Printed Name _____

Title _____

Date _____

Austrian Aerospace

By _____

Printed Name _____

Title _____

Date _____

Attachment A

Statement of Work

Attachment A

STATEMENT OF WORK

Between

Harris Corporation,
Government Communications Systems Division

And

Saab-Ericsson Space AB, Sweden,

And

Austrian Aerospace, Austria

For the
Global Positioning System Occultation Sensor (GPSOS)

TABLE OF CONTENTS

1.0 INTRODUCTION

This Technical Assistance Agreement is intended to enable HGCSD to perform defense services and disclose technical data during the Program Definition and Risk Reduction (PDRR) Phase in support of the requirements to integrate the GPSOS sensor onto the baseline NPOESS satellites and to evaluate the requirements for the retrieval of environmental parameters from the GPSOS.

There are several phases to the NPOESS program.

(i) The Development of Environmental Sensors

Beginning in 1997, the IPO issued contracts for the development of five major sensors that are to be integrated on future NPOESS satellites. An important element of the contracts is the ultimate delivery to the IPO of the sensor plus algorithms that allow environmental parameters to be retrieved from the remotely-sensed data. One of the contracts is with Saab for the development of the GPSOS and its retrieval algorithms. Saab and its subcontractor, Austrian Aerospace, will continue the development of the GPSOS during the current Phase of their contract which extends with options beyond 2005.

(ii) The Program Definition and Risk Reduction

LMMS is currently under contract - number #F04701-00-C-0501 - with the IPO. The contract is for the NPOESS Program Definition and Risk Reduction (PDRR) phase to provide a single, national polar-orbiting remote sensing capability to acquire, receive, and disseminate global and regional environmental data. HGCSD is a sub-contractor to LMSS for the NPOESS program. A similar competitive PDRR contract was awarded to TRW by the NPOESS IPO, and a down-select contract will be awarded to either LMMS or TRW for the Engineering and Manufacturing Development (EMD)/Production phase of the NPOESS program. One element of the PDRR contract is to reduce the risk of integrating the five NPOESS sensors, including GPSOS, onto the baseline of the LMMS satellite. . Further, the PDRR phase contractors/subcontractors have been specifically tasked to reduce the risk of developing an Interface Data Processor Segment (IDPS) for processing the data obtained from these sensors into usable environmental products. The PDRR phase will end on 30 March 2002 or, if an option to the contract is exercised, on 31 December 2002.

The primary exchange of information to be carried out under this TAA will take place during the PDRR phase of the NPOESS program - namely from 1 March 2000 through 31 December 2002. The exchange of data includes the requirements for (1) spacecraft to GPSOS instrument interface specifications, (2) test plans and procedures specific to the GPSOS interface and instrument performance, and (3) interface drawings and analysis for instrument specific mechanical, thermal, electrical, data processing, flight software and fields-of-view analysis (optical, radio frequency, and thermal). (4) algorithm theoretical basis document(s) and explanations as required (5) GPSOS output data for use in independent testing and software optimization for IDPS development. In addition, the expected performance of the algorithms to retrieve environmental parameters using data from the GPSOS is required information to be provided by Saab to HGCSD and LMMS.

(iii) The Engineering and Manufacturing Development (EMD)/Production

The next phase in the NPOESS program, the EMD/Production, will call for the building of three satellites with an option to build four additional satellites. This phase also includes the full

scale development and deployment of the IDPS with possible options for long term support. Although the sensor complement for each of the satellites is variable, the plan is to incorporate a GPSOS sensor on each of the seven NPOESS satellites. At an early stage in the EMD/Production phase, the IPO will transfer the responsibility for the operation, maintenance, upgrading, and performance of the sensors to the successful EMD/Production contractor; i.e. either LMMS or TRW. If selected for the EMD phase, LMMS and HGCSD will amend their respective TAA's to accommodate these additional tasks.

2.0 SCOPE

The scope of this effort during the PDRR phase of the LMMS contract with the IPO, consists of Lockheed Martin Missiles and Space (LMMS) exchanging technical date and providing defense services to Saab Ericsson Space AB (Saab) and Austrian Aerospace necessary for the development of the Global Position System Occultation Sensor (GPSOS). The GPSOS is currently under development by Saab and Austrian Aerospace through a contract with the Integrated Program Office of the United States Government. The work will enable LMMS, Saab, and Austrian Aerospace to disclose technical data and provide defense services in support of (1) the integration of the GPSOS instrument onto the baseline architecture of the LMMS satellite that is proposed for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and (2) the evaluation of the GPSOS algorithms for the retrieval of environmental parameters. As a sub-contractor to LMMS, Harris will provide defense services and exchange technical data in support of performance evaluation of environmental data, to include prototype processing system concepts and software, retrieved from the satellite sensor.

3.0 OBJECTIVE

The objective of the efforts is to exchange technical date and provide defense services associated with installing the GPSOS on an LMMS baseline spacecraft. The work includes information on the requirements for (1) the alignment of the GPSOS on the spacecraft, (2) functionally verifying the instrument-to-spacecraft interface, and (3) verifying the performance to retrieve environmental data from simulated GPSOS data. HGCSD's involvement includes evaluation of sensor performance by verifying environmental data and developing IDPS processing concepts and prototypes necessary to generate usable environmental products from the sensor data.

Such technical data to be exchanged includes, but is not limited to (1) spacecraft to instrument interface specifications, (2) test plans and procedures specific to the instrument interface and instrument performance, (3) interface drawings and analysis for instrument specific mechanical, thermal, electrical, data processing, flight software and fields-of-view analysis (optical, radio *frequency, and thermal), and (4) algorithms for the retrieval and further processing of* environmental parameters.

4.0 TASK DESCRIPTIONS

The following services and technical data are required in order to support (1) the integration of the Saab/Austrian Aerospace GPSOS instrument on the baseline architecture of the LMMS satellite for the NPOESS program and (2) the evaluation of the algorithms for the retrieval and processing of environmental parameters.

4.1 LMMS Interface Specifications and Drawings Applicable to GPSOS

4.1.1 Description

Review all Saab and Austrian Aerospace GPSOS inputs to the draft Unique Instrument Interface Control Document (ICD) and the General Instrument Interface Specification (GIIS).

The task will include the following:

- Review the Saab and Austrian Aerospace inputs to the Interface Control Documents and confirm that the Interfaces are compatible with the baseline architecture of the LMMS NPOESS satellite,
- Review all interface drawings and analyses - prepared with joint input by LMMS, Saab, and Austrian Aerospace - applicable to GPSOS; these include:
  - Mechanical interfaces,
  - Thermal interfaces,
  - Electrical interfaces,
  - Fields-of-view (optical, thermal, and radio frequency), and spacecraft configuration

4.1.2 Approach

- LMMS will analyze all GPSOS interface documents and ensure that the interfaces are consistent with the requirements of the LMMS NPOESS satellite
- LMMS will interface directly with Saab and Austrian Aerospace personnel to resolve any discrepancies between the proposed GPSOS interfaces and the LMMS satellite
- LMMS will document their evaluation of the interface documents

4.1.3 Schedule

The review of the interface documents will occur between March and December of 2000.

4.2 Test Plans and Procedures Applicable to GPSOS

4.2.1 Description

Review all Saab and Austrian Aerospace GPSOS test plans and procedures that are applicable to GPSOS

The task will include the requirements for the following tests and procedures:

- Instrument bench tests
- Spacecraft interface tests
- Spacecraft level tests
- Spacecraft environmental tests
- GPSOS instrument installation procedures
- Sensor calibration testing and resultant data/results as they pertain to implementing the IDPS capability.
- Generation of data sets for use in algorithm testing and operational implementation.

4.2.2 Approach

- LMMS/HGCSD will analyze all proposed test plans and procedures that relate to the integration of the GPSOS onto an LMMS satellite and process the sensor's data within an IDPS.
- LMMS will interface directly with Saab personnel to resolve any discrepancies between the proposed GPSOS tests and LMMS standard procedures
- LMMS will document their evaluation of test procedures

4.2.3 Schedule

The review of the interface documents will occur between March 2000 and March of 2001.

4.3 Software Specifications/documents applicable to GPSOS

4.3.1 Description

Review Saab software specifications applicable to GPSOS

The task will include reviews of the following software specifications/documents:

- Specifications of the ground processing of the GPSOS sensor data
- Interface specific flight software specifications
- Algorithm theoretical basis documents

4.3.2 Approach

- HGCSD will analyze the specifications of the ground processing of data received from the GPSOS instrument
- LMMS and HGCSD (as required) will review and analyze the software specifications for flight software between the GPSOS instrument and the LMMS baseline satellite

4.3.3 Schedule

The review of the interface documents will occur between March 2000 and December 2001.

4.4 Host or Attend Meetings for the Exchange of Technical GPSOS Data

4.4.1 Description

Attend technical interchange meetings involving GPSOS

The task will include participation in the following types of reviews

- Design reviews
- Technical Interchange Meetings (TIM's)
- Test support reviews
- GPSOS and LMMS satellite baseline data

- On-orbit anomaly review and resolution
- Algorithm performance and software generation within an IDPS environment.

4.4.2 Approach

- At the request of the NPOESS Integrated Program Office, LMMS and HGCSD will attend reviews and technical interchange meetings that are required to coordinate the integration of the GPSOS sensor onto an LMMS baseline spacecraft and correctly process/evaluate the sensor's output data within a ground system.

4.4.3 Schedule

Interface meetings between Saab, Austrian Aerospace, and LMMS will occur between March 2000 and December 2002.

5.0 DELIVERABLES

Reports of the major interchange meetings will be delivered to the NPOESS IPO within 30 days of each meeting. The first meeting is scheduled for March 13, 2000. Subsequent interchange meetings are planned at approximately six-month intervals through December 2002.

DTC CASE REFERRAL DOCUMENT

ADMIN USE	DATE STAFFED	DTC CASE NUMBER
	JAN - 5 2001	TA 0039-01

APPLICANT: Harris Corporation

	Advisory Opinion	X	Agreement - [Mfg], [Tech Assist],]Distribution]		Brokering Request

DTC CASE OFFICER: LtCol DeSilva
DTC Comments:

Recommendations and Comments Are Requested From:

X	DTRA/LD		NEA/RA		DRL/MLA	✓	Transmittal Letter
						✓	Attachments, stated on appl
X	NASA		EAP/RSP		OES		Tech data/Descrip Literature
							Statement of Work
	ENERGY		EUR/RPM		PM/RSAT		Order/Ltr of Intent/Contract
						✓	Copy of Agreement
	DOT/USCG		AF/RA		NP/CBM		Copy of previous Approvals
							End Use Certificate/DSP-83
	COMMERCE		WHA/PPCP		DTC/CEB		Import Authorization
							Other (videocassette, etc.)
	L/PM		SA/RA		DTC/		Nothing
						✓	# of Collated Sets
	PKRC		EUR/PRA	X	PM/ECNP		

REPLY HERE AND RETURN TO DEPARTMENT OF STATE, OFFICE OF DEFENSE TRADE CONTROLS, WASHINGTON, D.C. 20520-0206. Recommendations within 25 working days of date staffed are appreciated. **PROVIDE COMMENTS FOR ANY RECOMMENDATION TO DENY OR RETURN WITHOUT ACTION (RWA).**

RECOMMENDATION & COMMENTS:

	APPROVE		APPROVE *WITH* PROVISO		RWA		DENY

COMMENTS:

Typed/Printed NAME AND OFFICE SYMBOL SIGNATURE

DATE: Telephone Number:

DTC CASE REFERRAL DOCUMENT

ADMIN USE	DATE STAFFED	DTC CASE NUMBER
	JAN - 5 2001	TA 0039-01

APPLICANT: Harris Corporation

	Advisory Opinion	X	Agreement - [Mfg], [Tech Assist],]Distribution]		Brokering Request

DTC CASE OFFICER: LtCol DeSilva
DTC Comments:

Recommendations and Comments Are Requested From:

X	DTRA/LD		NEA/RA		DRL/MLA	✓	Transmittal Letter
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	COMMERCE		WHA/PPCP		DTC/CEB		Import Authorization
							Other (videocassette, etc.)
	L/PM		SA/RA		DTC/		Nothing
						↗	# of Collated Sets
	PKRC		EUR/PRA	X	PM/ECNP		

REPLY HERE AND RETURN TO DEPARTMENT OF STATE, OFFICE OF DEFENSE TRADE CONTROLS, WASHINGTON, D.C. 20520-0206. Recommendations within 25 working days of date staffed are appreciated. **PROVIDE COMMENTS FOR ANY RECOMMENDATION TO DENY OR RETURN WITHOUT ACTION (RWA).**

RECOMMENDATION & COMMENTS:

	APPROVE		APPROVE *WITH* PROVISO		RWA		DENY

COMMENTS:

Typed/Printed NAME AND OFFICE SYMBOL SIGNATURE

DATE: Telephone Number:

Proposed
TECHNICAL ASSISTANCE AGREEMENT

BETWEEN

HARRIS CORPORATION

and

European Space Agency, France

And

European Organization for the Exploitation of Meteorological Satellites, Germany

Prepared 21 December 2000 by

Harris Corporation
Melbourne, Florida
PM/DTC Registrant/Applicant Code: 0501-3664

HARRIS

HARRIS CORPORATION

Corporate Headquarters
1025 West NASA Boulevard
Melbourne, FL USA 32919
phone 321.727.9220
fax 321.727.9636
email bartlett@harris.com

DTC Applicant Code 0501-3664

December 21, 2000

Mr. William J. Lowell
Office of Defense Trade Controls
PM/DTC, SA-1, 13th Floor
U.S. Department of State
2401 E. Street, NW
Washington, DC 20037

SUBJECT: Proposed Technical Assistance Agreement between Harris Corporation, Government Communications Systems Division and European Space Agency, France, and European Organization for the Exploitation of Meteorological Satellites, Germany

Dear Mr. Lowell:

Submitted herewith are seven copies of this letter and eight copies of a proposed Technical Assistance Agreement collated into eight sets, between Harris Corporation, through its Government Communications Systems Division (Harris GCSD), a U.S corporation, and the European Space Agency (ESA), France, and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), Germany, for the transfer of certain technical information and assistance necessary for the implementation of the National Polar-orbiting Operational Environmental Satellite System (NPOESS).

Harris GCSD is a sub-contractor to Lockheed Martin Missiles & Space ("LMMS") for the NPOESS Program. LMMS is under contract (Number F04701-00-C-0501) with the US Government's Integrated Program Office (IPO), which is comprised of Department of Commerce, NASA and Department of Defense representatives. The LMMS Prime contract is for the Program Definition and Risk Reduction (PDRR) phase of the NPOESS Program. The IPO has two PDRR prime contractors, LMMS and TRW.

LMMS desires to exchange technical data and provide defense services to ESA and EUMETSAT relating to the requirements to integrate the Meteorological Operational Satellite (METOP) into the LMSS baseline satellite for the NPOESS program. This includes the requirements to evaluate the performance of the environmental instrument algorithms and for the retrieval of environmental parameters produced by the METOP satellite.

It is the intent of the IPO to provide METOP data to the contractor (either LMMS or TRW) selected for the Engineering and Manufacturing Development phase of NPOESS. The EMD contractor (either LMMS or TRW) will by necessity share

information with their subcontractors (Harris GCSD or Raytheon) for the Interface Data Processor Segment (IDPS) development and support. Therefore ESA and EUMESTAT have to receive technical data and defense services related to the integration of the METOP data and the METOP retrieval algorithms for the NPOESS Program.

The following information is provided as required by 22 CFR 124.12:

(a)(1) The DTC applicant code is: 0501-3664

(a)(2) The licensee is the European Space Agency, located at 8-10 rue Mario Nikis 75738 Paris Cedex France and the European Organization for the Exploitation of Meteorological Satellites, located at AM Kavalleriesand 31, D-64295 Darmstadt, Germany. The scope of this Agreement entails Harris disclosing unclassified technical data to ESA and EUMETSAT related to the retrieval algorithms for METOP sensors. This Agreement is valid through 31 December 2008.

(a)(3) Harris has executed numerous space programs for U.S. Air Force and NASA customers who have content similar in nature to that being procured for the NPOESS Program. One example is the Defense Meteorological Satellite Program (DMSP) for the US Air Force, Contract Nos. F04701-84-C-0038, and F04701-87-C-0135. Our DMSP work for the air Force goes back to the mid-1960's. With regard to the retrieval algorithms, Harris has taken environmental parameter retrieval algorithms and used them so that meaningful weather information can be processed and displayed.

(a) (4) All data to be transferred will be unclassified.

(a) (5) There are no patent applications, which disclose any of the subject matter of the equipment or technical data, covered by an invention secrecy order issued by the U.S. Patent and Trade Office.

(a) (6) Harris is supplying an estimated value of $20,000,000 of data and services over the eight-year validity period of this agreement. This estimate is based upon the proposals submitted for the baseline and any additional options, which could be exercised over the term of the contract. No political contributions, fees, or commissions have been paid pursuant to ITAR Part 130. No offset agreement is proposed to be entered into in connection with the agreement.

(a) (7) There will be no foreign military sales, credits or loan guarantees involved in financing the Agreement.

(a) (8) Not applicable. (There will be no classified data transferred under this Agreement.)

(a) (9) Not applicable. (There will be no classified data transferred under this Agreement.)

(b)(1) If the Department of State approves the Agreement, Harris will not construe

such approval as passing on the legality of the Agreement from the standpoint of antitrust laws or other applicable statutes, nor will Harris construe the Department's approval

as constituting either approval or disapproval of any of the business terms or conditions between the parties to the Agreement.

(b)(2) Harris will not permit the proposed Agreement to enter into force until the Department of State has approved it.

(b)(3) Harris will furnish the Department of State with one copy of the signed Agreement within 30 days from the date that the Agreement is concluded and will inform the Department of its termination not less than 30 days prior to the expiration and provide information on the continuation of any foreign rights or the flow of technical data to the foreign party. If a decision is made not to conclude the proposed Agreement, Harris will so inform the Department within 60 days.

(b)(4) If this Agreement grants any rights to sub-license, it will be amended to require that all sub-licensing agreements incorporate all the provisions of the basic Agreement that refer to the U.S. Government and the Department of State (i.e., 22 CFR 124.9 and 124.10).

To facilitate U.S. Government consideration of this request, the Agreement contains the following provisions currently required by the ITAR:

Pursuant to 22 CFR 124.7:

CFR Section	Agreement Reference
124.7(1)	Section I, paragraph 1, page 3
124.7(2)	Section I, paragraph 2, page 4
124.7(3)	Section I, paragraph 3, page 4
124.7(4)	Section I, paragraph 4, page 4

Pursuant to 22 CFR 124.8:

CFR Section	Agreement Reference
124.8(1)	Section II, paragraph 1, page 5
124.8(2)	Section II, paragraph 2, page 5
124.8(3)	Section II, paragraph 3, page 5
124.8(4)	Section II, paragraph 4, page 5
124.8(5)	Section II, paragraph 5, page 5
124.8(6)	Section II, paragraph 6, page 5.

No Defense articles will be shipped in furtherance of this Agreement. Only technical data in the form of assembly specifications for units under consideration for procurement will be provided.

This agreement relates to the following U.S. Munitions List Category XV – Spacecraft Systems and Associated Equipment. This category is not designated as Significant

Military Equipment (SME).

Harris Corporation has retained the law firm of Holland & Knight, LLP, Washington, DC, to represent Harris regarding this matter. Harris Corporation authorizes Ronald A. Oleynik, Esq., or any other attorney from Holland & Knight to act as our agent with respect to related ODTC licensing issues. If you should have any questions or require additional information concerning this Agreement, please contact me at (321) 727-9220.

Sincerely,

James E. Bartlett III
Senior Counsel
Director, Export/Import Compliance

Enclosures:

Eight copies of Proposed TAA
Including Letter of Transmittal and Certification Letter per ITAR 126.13

HARRIS

HARRIS CORPORATION

Corporate Headquarters
1025 West NASA Boulevard
Melbourne, FL USA 32919
phone 321.727.9220
fax 321.727.9636
email bartlett@harris.com

DTC Applicant Code 0501-3664

21 December 2000

Mr. William J. Lowell
Director
Office of Defense Trade Controls (PM/DTC)
U.S. Department of State
2401 E Street, NW, Annex SA-1
Washington, D.C. 20037

Dear Mr. Lowell:

I, the undersigned, am a U.S. person as defined in 22 C.F.R § 120.15, and I am a responsible official empowered by Harris Corporation to certify the following in compliance with 22 C.F.R. § 126.13:

1. Neither Harris, its chief executive officer, president, vice presidents, other senior officers or officials (e.g., comptroller, treasurer, general counsel) nor any member of the board is:

a. the subject of an indictment for or has been convicted of violating any of the U.S. criminal statutes enumerated in 22 C.F.R. § 120.27 since the effective date of the Arms Export Control Act, Public Law 94-329, 90 Stat. 729 (June 30, 1976); or

b. ineligible to contract with, or to receive a license or other approval to import defense articles or defense services from, or to receive an export license or other approval from any agency of the U.S. Government;

2. To the best of my knowledge, no party to the export as defined in Section 126.7(e) has been convicted of violating any of the U.S. criminal statutes enumerated in 22 C.F.R. § 120.27 since the effective date of the Arms Export Control Act, Public Law 94-329, 90 Stat. 729 (June 30, 1976) or is ineligible to contract with, or to receive a license or other approval to import defense articles or defense services from, or to receive an export license or other approval from any agency of the U.S. Government, and

3. The natural person signing the application for the license or other request for approval is a responsible official who has been empowered by Harris and is a citizen of the United States.

Because the enclosed TAA application proposes only the provision of technical data and defense services, but no export of defense items, no list of consignors, freight forwarders, consignees, and intermediate consignees is enclosed.

Respectfully submitted,

James E. Bartlett III

JAMES E. BARTLETT III
SENIOR COUNSEL
DIRECTOR, EXPORT/IMPORT COMPLIANCE

Enclosure 1.

Technical Assistance Agreement

Harris Corporation

11 December 2000

TECHNICAL ASSISTANCE AGREEMENT

BETWEEN

HARRIS CORPORATION, GOVERNMENT COMMUNICATIONS SYSTEMS DIVISION

and

EUROPEAN SPACE AGENCY, France

and

EUROPEAN ORGANIZATION FOR THE EXPLOITATION OF METEOROLOGICAL SATELLITES, Germany

This Agreement is entered into between Harris Corporation, a corporation of the State of Delaware, for its division Harris Government Communications Systems Division (hereinafter referred to as "HGCSD") with offices at 150 South Wickham Road, P.O. Box 37, Melbourne, Florida, United States of America, 32902-0037, and European Space Agency (hereinafter referred to as "ESA"), located at 8-10 rue Mario Nikis 75738 Paris Cedex France and the European Organization for the Exploitation of Meteorological Satellites (hereinafter referred to as "EUMETSAT"), located at AM Kavalleriesand 31, D-64295 Darmstadt, Germany and is effective upon the date of signature of the last party to sign the Agreement. HGCSD, ESA, and EUMETSAT are hereinafter referred to as the Parties.

WHEREAS, HGCSD is under contract to Lockheed Martin Missiles and Space (LMMS) who is under contract (Number F04701-00-C-0501) with the Integrated Program Office (IPO) comprised of Department of Commerce, NASA and the Department of Defense (see Statement of Work) for the National Polar Orbiting Operational Environmental Satellite System (NPOESS) Program and;

WHEREAS, under this contract HGCSD is a sub-contractor to LMMS, who,as the prime contractor, will provide 5 satellites;

WHEREAS, the purpose of the NPOESS is to collect satellite-based global multispectral radiometry and other specialized meteorological, oceanographic, and solar-geophysical data and to disseminate the data to the program's central users and field users deployed worldwide;

WHEREAS, ESA and EUMETSAT have an agreement with the IPO to provide data from one satellite (METOP) and NPOESS Sensors to METOP;

WHEREAS, HGCSD as an LMMS sub-contractor, desires to provide ESA/ EUMETSAT with technical data and provide defense services and whereas ESA/EUMETSAT desires to receive technical data and defense services relating to the definition of the spacecraft operation tasks, data to be exchanged, algorithms and supporting data for science data processing, and the preparation of a proposal for the EMD phase);

NOW THEREFORE, the parties desire to enter into this Technical Assistance Agreement as follows:

1. This Technical Assistance Agreement is intended to enable HGCSD to provide defense services and disclose technical data during the Program Definition and Risk Reduction (PDRR) Phase, to define various elements needed to integrate sensors onto the METOP satellite, and to provide definition of algorithms needed to interpret environmental data. This TAA will also cover the preparation of a proposal for the EMD phase of the program and the initial period of the EMD phase.

The NPOESS Program

(a) ESA/EUMETSAT's and LMMS'Roles

ESA and EUMETSAT are currently under agreement with the IPO to provide one satellite (METOP) that will collect environmental data via several meteorological sensors. In addition, LMMS is under contract to provide five satellites, which will also have meteorological sensors. During operation of the satellites LMMS and ESA/EUMETSAT will exchange data from their respective sensors.

(b) NPOESS Program Phases:

(i) The Program Definition and Risk Reduction Phase

LMMS is currently under contract - number F04701-00-C-0501 - with the IPO. The contract is for the NPOESS Program Definition and Risk Reduction (PDRR) phase to provide a single, national polar-orbiting remote sensing capability to acquire, receive, and disseminate global and regional environmental data. HGCSD is under contract with LMMS for the NPOESS Program Definition and Risk Reduction (PDRR) Phase. A similar competitive PDRR contract was awarded to TRW by the NPOESS IPO, and a competitively selected contract will be awarded for the Engineering and Manufacturing Development (EMD)/Production phase in March of 2002. The PDRR phase will end on 30 March 2002 or, if an option to the contract is exercised, on 31 December 2002.

One element of the PDRR phase involves the definition of spacecraft operation tasks, data to be exchanged, spacecraft sensor interfaces, algorithms and supporting data for science

data processing during EMD. A second element of the PDRR phase, is the exchange technical data and provision of defense services to ESA/EUMETSAT as necessary for HGCSD and LMMS to prepare a proposal for the EMD phase of the contract.

For further information, see attached Statement of Work.

(ii) The Engineering and Manufacturing Development (EMD)/Production Phase

The next phase in the NPOESS program, the EMD/Production, will call for the building of five satellites by LMMS and one satellite (METOP) by ESA/EUMETSAT. During this phase, LMMS will provide technical data and defense services to resolve issues arising during sensor integration and science data processing. If selected for EMD, LMMS and HGCSD will amend this TAA to accommodate these additional tasks and will apply for the appropriate licenses for the export and import of hardware and information. As a sub-contractor to LMMS, HGCSD will be tasked to support LMMS in science data processing, which will require technical interface with ESA/EUMETSAT.

2. It is understood that this Technical Assistance Agreement is entered into as required under U.S. Government regulations and, as such, it is an independent agreement between the parties, the terms of which will prevail, notwithstanding any conflict or inconsistency that may be contained in other arrangements between the Parties on the subject matter.

3. The parties agree to comply with all applicable sections of the International Traffic in Arms Regulations (ITAR) of the U.S. Department of State and that, more particularly, in accordance with such regulations the following conditions apply to this Agreement:

I. ITAR 124.7

(1) Data to be exchanged is that necessary to define the risk associated with the integration of meteorological sensors onto the METOP satellite and to use algorithms for the interpretation of environmental data. This includes :

(1) algorithms for processing NPOESS sensor data (VIIRS, CMIS, etc.);
(2) ground truth test scenes for NPOESS sensors;
(3) NPOESS sensor performance mathematical models;
(4) NPOESS data format Definitions;
(5) Ground System Requirements for receiving and decoding NPOESS data;
(6) Interface drawings and analyses for NPOESS spacecraft including mechanical, thermal, electrical and data interfaces;
(7) NPOESS sensor operational data including command and memory loads, calibration data, telemetry conversion data and operating limits;
(8) Interface drawings for NPOESS sensors;
(9) Proposal services for EUMETSAT;

(10) Information about ground site coverage to support EUMETSAT and technical interface to Ground Support Equipment or Data Routing & Retrieval System.;
(11) Information about NPOESS orbits, ground contacts, data rates and earth coverage;
(12) Information about spacecraft orbits and coverage to define Environmental Data Records (EDR) coverage, ground site coverage and available time to support EUMETSAT OPS;
(13) Information relative to METOP operations and the processing of data from METOP.

All technical data and defense services transferred by ESA and EUMETSAT to HGCSD under this agreement pertain solely to the performance of environmental retrieval algorithms and the interface between the LMMS provided sensors and the METOP baseline spacecraft and does not represent a transfer of technical data or defense services specific to the design, manufacture, assembly or test of the NPOESS spacecraft itself. HGCSD will transfer to ESA and EUMETSAT software interface specifications pertaining to specific flight software data processing and ground support. No HGCSD software code or algorithms will be exchanged.

As currently envisioned, HGCSD does not anticipate any requirement to export HGCSD owned hardware in connection with this agreement.

(2) The technical assistance and data to be provided under this agreement includes all tasks associated with (1) the integration of the meteorological sensors onto the METOP satellite; (2) the retrieval of environmental algorithms and (3) preparation of a proposal for the EMD phase of the contract.

(3) The agreement is valid through 31 December 2008.

(4) All activities envisioned under this program will take place in the member nations of ESA Canada or in the United States of America. Furthermore it is understood that employees of ESA and Eumetsat who are foreign nationals and whose country of origin is listed below may require access to technical data and information exchanged hereunder.

Countries:

Argentina, Australia, Belgium. Canada, Czech Republic, Denmark, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, S. Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

HGCSD will obtain a Non-Disclosure Agreement (NDA) from Bomem for any third country foreign national recipient prior to the exchange of technical data.

The effort intended to be accomplished under this agreement will take place in the member nations of ESA (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom), and the member nations of EUMETSAT (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and the United Kingdom) or the United States of America. There is no other country or area in which manufacturing, processing, sale or other form of transfer is to be licensed.

II. ITAR 124.8

(1) This Agreement shall not enter into force and shall not be amended or extended without the prior written approval of the Department of State of the U.S. Government.

(2) This Agreement is subject to all United States laws and regulations relating to exports and to all administrative acts of the U.S. Government pursuant to such laws and regulations.

(3) The Parties to this Agreement agree that the obligations contained in this Agreement shall not affect the performance of any obligations created by prior contracts or subcontracts which the Parties may have individually or collectively with the U.S. Government.

(4) No liability will be incurred by or attributed to the U.S. Government in connection with any possible infringement of privately owned patent or proprietary rights, either domestic or foreign, by reason of the U.S. Government's approval of this Agreement.

(5) The technical data or defense service exported from the United States in furtherance of this Agreement and any defense article which may be produced or manufactured from such technical data or defense service may not be transferred to a person in a third country or to a national of a third country except as specifically authorized in this Agreement unless the prior written approval of the Department of State has been obtained.

In addition once ESA and/or EUMETSAT provides copies of executed NDA's containing the ITAR 124.8 clauses to HGCSD, exports may be made to employees who hold dual citizenship in or who are foreign nationals of the following countries:

Argentina, Australia, Belgium. Canada, Czech Republic, Denmark, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, S. Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

(6) All provisions in this Agreement which refer to the United States Government and the Department of State will remain binding on the Parties after the termination of the Agreement.

4. It is understood that disclosure of information by ESA or EUMETSAT to HGCSD is subject to any rules, restrictions or laws of the member nations of ESA or EUMETSAT.

5. Technical data relating to this program may be exchanged with contractors/subcontractors from the member nations of ESA and EUMETSAT provided that, prior to the release of any technical data, ESA and/or EUMETSAT executes a Non-Disclosure Agreement (NDA) with each company. The NDA will incorporate all of the provisions of the basic Agreement which refer to the U.S. Government and the Department of State (i.e., 22 CFR 124.8 and/or 124.9). Copies of the executed NDAs referencing this Agreement by number will be provided to and maintained by LMMS for five years from the expiration of the Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed effective as of the day and year above provided.

Harris Corporation
By _____

Printed Name _____

Title _____

Date _____

European Space Agency
By _____

Printed Name _____

Title _____

Date _____

European Organization for the Exploitation of Meteorological Satellites
By _____

Printed Name _____

Title _____

Date _____

Attachment A

Statement of Work

Attachment A

STATEMENT OF WORK

Between

Harris Corporation,
Government Communications Systems Division

And

European Space Agency, France,

And

European Organization for the Exploitation of Meteorological Satellites, Germany

TABLE OF CONTENTS

1.0 INTRODUCTION

This Technical Assistance Agreement is intended to enable HGCSD to perform defense services and disclose technical data during the Program Definition and Risk Reduction (PDRR) Phase in support of the requirements to define and evaluate the requirements for the retrieval of environmental parameters. This TAA will also allow HGCSD to exchange technical data necessary for the preparation of the proposal for the Engineering and Manufacturing Development (EMD) phase of the program.

The NPOESS program is managed by an Integrated Program Office (IPO) which is a tri-agency represented by NASA, the Department of Defense, and the Department of Commerce. The purpose of the NPOESS is to collect satellite-based global multispectral radiometry and other specialized meteorological, oceanographic, and solar-geophysical data and to disseminate the data to the program's central users and field users deployed worldwide.

THE NPOESS PROGRAM

(a) ESA/EUMETSAT's role

ESA and EUMETSAT are currently under agreement with the IPO to provide one satellite (METOP) that will collect environmental data via several meteorological sensors. In addition, LMMS is under contract to provide five satellites which will also have meteorological sensors. During operation of the satellites LMMS and ESA/EUMETSAT will exchange data from their respective sensors.

(b) NPOESS PROGRAM PHASES

(i)The Program Definition and Risk Reduction Phase

LMMS is currently under contract - number F04701-00-C-0501 - with the IPO. The contract is for the NPOESS Program Definition and Risk Reduction (PDRR) phase to provide a single, national polar-orbiting remote sensing capability to acquire, receive, and disseminate global and regional environmental data. HGCSD is under contract to LMMS to provide engineering services fir the PDRR phase. A similar PDRR contract was awarded to TRW by the NPOESS IPO, and a competitively awarded contract will be awarded for the Engineering and Manufacturing Development (EMD)/Production phase in March of 2002. The PDRR phase will end on 30 March 2002 or, if an option to the contract is exercised, on 31 December 2002.

During the PDRR phase LMMS will define all tasks- spacecraft operation, data to be exchanged, algorithms and supporting data for science data processing to be supplied during EMD. HGCS will support LMMS in this effort. Also during PDRR, HGCSD will need to exchange technical data and provide defense services in order to prepare its proposal for the EMD phase of the contract.

(ii) The Engineering and Manufacturing Development (EMD)/Production Phase

The next phase in the NPOESS program, the EMD/Production, will call for the building of five satellites by LMMS and one satellite by ESA/EUMETSAT. Also during this phase, HGCSD, as an LMMS contractor, will provide technical data to resolve issues arising during sensor integration and science data processing. If selected for the EMD phase, HGCSD will modify this TAA to accommodate these additional tasks.

2.0 SCOPE

During the PDRR & EMD phase of the HGCSD contract with LMMS, HGCSD will exchange technical data and provide defense services to ESA/EUMETSAT as necessary for exchange of meteorological data generated by NPOESS & EUMETSAT sensors, the algorithms necessary to process this data into Environmental Data Records (EDRs), the definition of the interfaces between the NPOESS & EUMETSAT data systems and the operations and timelines of both systems. This TAA will enable HGCSD, ESA and EUMETSAT to disclose technical data and provide defense services in support of:

1) development of the interfaces between the NPOESS & EUMETSAT systems which will permit the exchange of operational sensor data to be processed by each organization into EDRs. This includes the data exchange interfaces, data descriptions and formats, algorithms, calibration information and concepts of operations.
2) The definition of interfaces and data necessary for the NPOESS system to provide back-up support to the EUMETSAT satellites for the collection of down-linked date and the relay of command uploads.

3.0 OBJECTIVE

The objective of the effort is to exchange technical date and provide defense services associated with the establishment of a system and associated interfaces to exchange and process meteorological data generated by NPOESS & EUMETSAT sensors which will be flying on both the NPOESS & EUMETSAT spacecraft. The work includes information on the requirements for 1)operation of the NPOESS sensors, 2) interfaces and services needed to support the delivery of meteorological data and 3) algorithms required to calibrate and process this data into EDRs, and 4) algorithms to process data from METOP sensors

Technical data to be exchanged includes 1) physical and electrical properties for sensors, 2) sensor concept of operations, 3) command and telemetry definitions, 4) data exchange formats and interfaces, 5) EDR algorithms and 6) data processing Con ops and timelines.

4.0 TASK DESCRIPTIONS

The following services and technical data are required in order to support the exchange of data between NPOESS & EUMETSAT, processing of data into EDRs and preparation of a proposal for the EMD phase of the contract.

4.1 Interface Specifications and Drawings Applicable to NPOESS Sensors

4.1.1 Description

EUMETSAT will provide and HGCSD will review EUMETSAT interface documents for the exchange of sensor data collected by EUMETSAT spacecraft that will include:

- Algorithms for processing METOP Sensor data
- Ground Truth test scenes for METOP sensors
- METOP sensor performance (mathematical) models
- METOP Data Format Definition
- Ground System requirements for receiving and decoding METOP data
- Interface drawings and analyses for METOP spacecraft mechanical, thermal, electrical interfaces
- METOP sensor operations data including command and memory loads, calibration data, telemetry conversion data and operating limits
- Coverage requirements
- Hardware interfaces to facilitate the exchange of data commands and telemetry between systems

LMMS and HGCSD will provide and EUMETSAT/ESA will review interface documentation for the exchange of sensor data collected by the NPOESS spacecraft. This will include:

- Algorithms for processing NPOESS sensor data
- Ground truth test scenes for NPOESS sensors
- NPOESS sensor performance mathematical models
- NPOESS data format Definitions
- Ground System Requirements for receiving and decoding NPOESS data
- Interface drawings and analyses for NPOESS spacecraft including mechanical, thermal, electrical and data interfaces
- NPOESS sensor operational data including command and memory loads, calibration data, telemetry conversion data and operating limits
- Interface drawings for NPOESS sensors
- Proposal services for EUMETSAT
- Information about ground site coverage to support EUMETSAT and technical interface to Ground Support Equipment or Data Routing & Retrieval System
- Information about NPOESS orbits, ground contacts, data rates and earth coverage

- Information about spacecraft orbits and coverage to define Environmental Data Records (EDR) coverage, ground site coverage and available time to support EUMETSAT OPS.

4.1.2 Approach

- HGCSD and LMMS will provide and EUMETSAT will review the requirement information and documentation about NPOESS sensors and algorithms including testing and operations
- EUMETSAT will provide and HGCSD and LMMS will review the required information and documentation about METOP sensors and algorithms involving testing and operations
- HGCSD and LMMS will interface directly with ESA and EUMETSAT personnel to resolve any interface issues
- HGCSD and LMMS and EUMETSAT will document their evaluation of the interface and operational documentation

4.1.3 Schedule

The review of the documentation will occur between the date of an approved and executed TAA and October 2001. If LMMS is awarded the EMD contract, this will continue until December 2008.

4.2 Test Plans and Procedures Applicable to NPOESS Sensors

4.2.1 Description

Review all test plans and procedures that are applicable to NPOESS sensors

The task will include the requirements for the following tests and procedures:

- Instrument bench tests
- Spacecraft interface tests
- Spacecraft level tests
- Spacecraft environmental tests
- Instrument installation procedures

4.2.2 Approach

- EUMETSAT will interface directly with personnel to resolve any discrepancies between the proposed tests and EUMETSAT standard procedures
- EUMETSAT will document their evaluation of test procedures

4.2.3 Schedule

The review of the interface documents will occur between October 2000 and October of 2001. If awarded the EMD contract this will continue until December 2008.

4.3 Host or Attend Meetings for the Exchange of Technical Data

4.3.1 Description

Attend technical interchange meetings involving the timely exchange of meteorological data between the NPOESS and EUMETSAT organizations
The task will include participation in the following types of reviews

- Design reviews
- Technical Interchange Meetings (TIMs)
- Test support reviews

4.3.2 Schedule

Interface meetings between ESA, EUMETSAT, HGCSD and LMMS will occur between date of an approved and executed TAA and December 2002.

4.4 Preparation of Proposal for the EMD phase of the Contract

4.4.1 Description

ESA/EUMETSAT will support HGCSD and LMMS as it prepares its proposal for the EMD phase technical and cost proposal.

4.4.2 Approach

- During the EMD phase HGCSD and LMMS will make available NPOESS data and algorithms to ESA and EUMETSAT. In the same time frame ESA and EUMETSAT will make available METOP data and algorithms to NPOESS.
- Several meetings will be held with ESA/EUMETSAT to determine the level of support that will be required during the EMD phase.

4.4.3 Schedule

ESA and EUMETSAT will provide information to support proposal activities between the date of execution of an approved TAA and December 2001.

5.0 DELIVERABLES

Reports of the major interchange meetings will be delivered to the NPOESS IPO within 30 days of each meeting. Interchange meetings are planned at approximately six-month intervals through December 2002.

The following is a list of documents which is representative of the technical data and assistance to be exchanged.

Title	Type	Document Number
NPOESS System Performance Specification	Spec	TBD
NPOESS C3 Segment Performance Specifications	Spec	TBD
Communication Link Budgets	Engr Mem	TBD
NPOESS Concept of Operation	Doc	TBD
Specific Equipment Specification (antenna, receiver)	Doc	TBD

DTC CASE REFERRAL DOCUMENT

ADMIN USE	DATE STAFFED	DTC CASE NUMBER
	JAN - 5 2001	TA 0041-01

APPLICANT: Harris Corporation

	Advisory Opinion	X	Agreement - [Mfg], [Tech Assist],]Distribution]		Brokering Request

DTC CASE OFFICER: LtCol DeSilva
DTC Comments:

Recommendations and Comments Are Requested From:

X	DTRA/LD		NEA/RA		DRL/MLA	✓	Transmittal Letter
						✓	Attachments, stated on appl
X	NASA		EAP/RSP		OES		Tech data/Descrip Literature
							Statement of Work
	ENERGY		EUR/RPM		PM/RSAT		Order/Ltr of Intent/Contract
						✓	Copy of Agreement
	DOT/USCG		AF/RA		NP/CBM		Copy of previous Approvals
							End Use Certificate/DSP-83
	COMMERCE		WHA/PPCP		DTC/CEB		Import Authorization
							Other (videocassette, etc.)
	L/PM		SA/RA		DTC/		Nothing
						7	# of Collated Sets
	PKRC		EUR/PRA	X	PM/ECNP		

REPLY HERE AND RETURN TO DEPARTMENT OF STATE, OFFICE OF DEFENSE TRADE CONTROLS, WASHINGTON, D.C. 20520-0206. Recommendations within 25 working days of date staffed are appreciated. **PROVIDE COMMENTS FOR ANY RECOMMENDATION TO DENY OR RETURN WITHOUT ACTION (RWA).**

RECOMMENDATION & COMMENTS:

	APPROVE		APPROVE *WITH* PROVISO		RWA		DENY

COMMENTS:

Typed/Printed NAME AND OFFICE SYMBOL SIGNATURE

DATE: Telephone Number:

DTC CASE REFERRAL DOCUMENT

ADMIN USE	DATE STAFFED	DTC CASE NUMBER
	JAN - 5 2001	TA 0041-01

APPLICANT: Harris Corporation

	Advisory Opinion	X	Agreement - [Mfg], [Tech Assist],]Distribution]		Brokering Request

DTC CASE OFFICER: LtCol DeSilva
DTC Comments:

Recommendations and Comments Are Requested From:

X	DTRA/LD		NEA/RA		DRL/MLA	✓	Transmittal Letter
						✓	Attachments, stated on appl
X	NASA		EAP/RSP		OES		Tech data/Descrip Literature
							Statement of Work
	ENERGY		EUR/RPM		PM/RSAT		Order/Ltr of Intent/Contract
						✓	Copy of Agreement
	DOT/USCG		AF/RA		NP/CBM		Copy of previous Approvals
							End Use Certificate/DSP-83
	COMMERCE		WHA/PPCP		DTC/CEB		Import Authorization
							Other (videocassette, etc.)
	L/PM		SA/RA		DTC/		Nothing
						7	# of Collated Sets
	PKRC		EUR/PRA	X	PM/ECNP		

REPLY HERE AND RETURN TO DEPARTMENT OF STATE, OFFICE OF DEFENSE TRADE CONTROLS, WASHINGTON, D.C. 20520-0206. Recommendations within 25 working days of date staffed are appreciated. **PROVIDE COMMENTS FOR ANY RECOMMENDATION TO DENY OR RETURN WITHOUT ACTION (RWA).**

RECOMMENDATION & COMMENTS:

	APPROVE		APPROVE *WITH* PROVISO		RWA		DENY

COMMENTS:

Typed/Printed NAME AND OFFICE SYMBOL SIGNATURE

DATE: Telephone Number:

Proposed
TECHNICAL ASSISTANCE AGREEMENT

BETWEEN

HARRIS CORPORATION

and

Alcatel Space Industries

France

Prepared 22 December 2000 by
Harris Corporation
Melbourne, Florida
PM/DTC Registrant/Applicant Code: 0501-3664

HARRIS

HARRIS CORPORATION

Corporate Headquarters
1025 West NASA Boulevard
Melbourne, FL USA 32919
phone 321.727.9220
fax 321.727.9636
email bartlett@harris.com

DTC Applicant Code 0501-3664

22 December 2000

Mr. William J. Lowell
Director
Office of Defense Trade Controls (PM/DTC)
U.S. Department of State
2401 E Street, NW, Annex SA-1
Washington, D.C. 20037

Dear Mr. Lowell:

I, the undersigned, am a U.S. person as defined in 22 C.F.R § 120.15, and I am a responsible official empowered by Harris Corporation to certify the following in compliance with 22 C.F.R. § 126.13:

1. Neither Harris, its chief executive officer, president, vice presidents, other senior officers or officials (e.g., comptroller, treasurer, general counsel) nor any member of the board is:

a. the subject of an indictment for or has been convicted of violating any of the U.S. criminal statutes enumerated in 22 C.F.R. § 120.27 since the effective date of the Arms Export Control Act, Public Law 94-329, 90 Stat. 729 (June 30, 1976); or

b. ineligible to contract with, or to receive a license or other approval to import defense articles or defense services from, or to receive an export license or other approval from any agency of the U.S. Government;

2. To the best of my knowledge, no party to the export as defined in Section 126.7(e) has been convicted of violating any of the U.S. criminal statutes enumerated in 22 C.F.R. § 120.27 since the effective date of the Arms Export Control Act, Public Law 94-329, 90 Stat. 729 (June 30, 1976) or is ineligible to contract with, or to receive a license or other approval to import defense articles or defense services from, or to receive an export license or other approval from any agency of the U.S. Government, and

3. The natural person signing the application for the license or other request for approval is a responsible official who has been empowered by Harris and is a citizen of the United States.

Because the enclosed TAA application proposes only the provision of technical data and defense services, but no export of defense items, no list of consignors, freight forwarders, consignees, and intermediate consignees is enclosed.

Respectfully submitted,

James E. Bartlett III

JAMES E. BARTLETT III
SENIOR COUNSEL
DIRECTOR, EXPORT/IMPORT COMPLIANCE

HARRIS

HARRIS CORPORATION

Corporate Headquarters
1025 West NASA Boulevard
Melbourne, FL USA 32919
phone 321.727.9220
fax 321.727.9636
email bartlett@harris.com

DTC Applicant Code 0501-3664

December 22, 2000

Mr. William J. Lowell
Office of Defense Trade Controls
PM/DTC, SA-1, 13th Floor
U.S. Department of State
2401 E. Street, NW
Washington, DC 20037

SUBJECT: Proposed Technical Assistance Agreement between
Harris Corporation, Government Communications Systems Division
and Alcatel Space Industries, France

Dear Mr. Lowell:

Submitted herewith are seven copies of this letter and eight copies of a proposed Technical Assistance Agreement collated into eight sets, between Harris Corporation, through its Government Communications Systems Division (Harris GCSD), a U.S corporation, and Alcatel Space Industries, France, for the transfer of certain technical information and assistance necessary for the implementation of the National Polar-orbiting Operational Environmental Satellite System (NPOESS).

Harris GCSD is a sub-contractor to Lockheed Martin Missiles & Space (LMMS) for the NPOESS Program. LMMS is under contract (Number F04701-00-C-0501) with the U.S. Government's Integrated Program Office (IPO), which is comprised of Department of Commerce, NASA and Department of Defense representatives. The LMMS Prime contract is for the Program Definition and Risk Reduction (PDRR) phase of the NPOESS Program. The IPO has two PDRR prime contractors, LMMS and TRW.

LMMS desires to exchange technical data and provide defense services to Alcatel relating to the requirement to integrate the Altimeter onto the LMMS baseline satellite for the NPOESS program. This includes the requirements to evaluate the performance of the algorithms for the retrieval of altimeter parameters produced by the Alcatel instrument.

Alcatel is under contract with the IPO to provide both the ARGOS instruments and its retrieval algorithms for environmental parameters.

It is the intent of the IPO to provide the altimeter to the contractor (either LMMS or TRW) selected for the Engineering and Manufacturing Development phase of NPOESS. The EMD contractor (either LMMS or TRW) will by necessity share information with their subcontractors (Harris GCSD or Raytheon) for the Interface Data Processor Segment (IDPS) development and support. Therefore Alcatel has to receive technical data and defense services related to the integration of the altimeter and its retrieval algorithms onto the LMMS baseline satellite designed for NPOESS.

In accordance with 22 CFR 124.12, the following information is provided:

(a)(1) The DTC applicant code is: 0501-3664

(a)(2) The licensee is Alcatel Space Industries, whose office is situated at 26 Avenue J.F. Champollion, BP 1187, 31037, Toulouse Cedex 1, France. The scope of this Agreement entails Harris disclosing unclassified technical data to Alcatel related to the retrieval algorithms for altimeter parameters. This Agreement is valid through 31 December 2008.

(a)(3) Harris has executed numerous space programs for U.S. Air Force and NASA customers who have content similar in nature to that being procured for the NPOESS Program. One example is the Defense Meteorological Satellite Program (DSMP) for the US Air Force, Contract Nos. F04701-84-C-0038, and F04701-87-C-0135. Our DMSP work for the air Force goes back to the mid-1960's. With regard to the retrieval algorithms, Harris has taken environmental parameter retrieval algorithms and used them so that meaningful weather information can be processed and displayed.

(a) (4) All data to be transferred will be unclassified.

(a) (5) There are no patent applications, which disclose any of the subject matter of the equipment or technical data, covered by an invention secrecy order issued by the U.S. Patent and Trade Office.

(a) (6) Harris is supplying an estimated value of $20,000,000 of data and services over the eight-year validity period of this agreement. This estimate is based upon the proposals submitted for the baseline and any additional options, which could be exercised over the term of the contract. No political contributions, fees, or commissions have been paid pursuant to ITAR Part 130. No offset agreement is proposed to be entered into in connection with the agreement.

(a) (7) There will be no foreign military sales, credits or loan guarantees involved in financing the Agreement.

(a) (8) Not applicable. (There will be no classified data transferred under this Agreement.)

(a) (9) Not applicable. (There will be no classified data transferred under this Agreement.)

(b)(1) If the Department of State approves the Agreement, Harris will not construe such approval as

passing on the legality of the Agreement from the standpoint of antitrust laws or other applicable statutes, nor will Harris construe the Department's approval

as constituting either approval or disapproval of any of the business terms or conditions between the parties to the Agreement.

(b)(2) Harris will not permit the proposed Agreement to enter into force until the Department of State has approved it.

(b)(3) Harris will furnish the Department of State with one copy of the signed Agreement within 30 days from the date that the Agreement is concluded and will inform the Department of its termination not less than 30 days prior to the expiration and provide information on the continuation of any foreign rights or the flow of technical data to the foreign party. If a decision is made not to conclude the proposed Agreement, Harris will so inform the Department within 60 days.

(b)(4) If this Agreement grants any rights to sub-license, it will be amended to require that all sub-licensing agreements incorporate all the provisions of the basic Agreement that refer to the U.S. Government and the Department of State (i.e., 22 CFR 124.9 and 124.10).

To facilitate U.S. Government consideration of this request, the Agreement contains the following provisions currently required by the ITAR:

Pursuant to 22 CFR 124.7:

CFR Section	Agreement Reference
124.7(1)	Section I, paragraph 1, page 3
124.7(2)	Section I, paragraph 2, page 4
124.7(3)	Section I, paragraph 3, page 4
124.7(4)	Section I, paragraph 4, page 4

Pursuant to 22 CFR 124.8:

CFR Section	Agreement Reference
124.8(1)	Section II, paragraph 1, page 4
124.8(2)	Section II, paragraph 2, page 4
124.8(3)	Section II, paragraph 3, page 4
124.8(4)	Section II, paragraph 4, page 4
124.8(5)	Section II, paragraph 5, page 4
124.8(6)	Section II, paragraph 6, page 4.

No Defense articles will be shipped in furtherance of this Agreement. Only technical data in the form of assembly specifications for units under consideration for procurement will be provided.
This agreement relates to the following U.S. Munitions List Category XV – Spacecraft Systems and Associated Equipment. This category is not designated as Significant Military Equipment (SME).

Harris Corporation has retained the law firm of Holland & Knight, LLP, Washington,

DC, to represent Harris regarding this matter. Harris Corporation authorizes Ronald A. Oleynik, Esq., or any other attorney from Holland & Knight to act as our agent with respect to related ODTC licensing issues. If you should have any questions or require additional information concerning this Agreement, please contact me at (321) 727-9220.

Sincerely,

James E. Bartlett III
Senior Counsel
Director, Export/Import Compliance

Enclosures:

Eight copies of Proposed TAA
Including Letter of Transmittal and Certification Letter per ITAR 126.13

Enclosure 1.

Technical Assistance Agreement

11 December 2000

TECHNICAL ASSISTANCE AGREEMENT

BETWEEN

HARRIS CORPORATION, GOVERNMENT COMMUNICATIONS SYSTEMS DIVISION

AND

ALCATEL SPACE INDUSTRIES, France

This Agreement is entered into between Harris Corporation, a corporation of the State of Delaware, for its Government Communications Systems Division (hereinafter referred to as "HGCSD") with offices at 150 South Wickham Road, P.O. Box 37, Melbourne, Florida, United States of America, 32902-0037, and Alcatel Space Industries (hereinafter referred to as "Alcatel") whose office is situated at 26 Avenue J.F. Champollion, BP 1187, 31037 Toulouse Cedex 1, France, and is effective upon the date of signature of the last party to sign the Agreement. HGCSD and Alcatel are hereinafter referred to as the Parties.

WHEREAS, HGCSD is a sub-contractor to Lockheed Martin Missiles & Space (hereinafter referred to as "LMMS"), who is under contract (Number F04701-00-C-0501) with the Integrated Program Office comprised of Department of Commerce, NASA and the Department of Defense (see Statement of Work), and

WHEREAS, LMMS desires to exchange technical data and provide defense services to Alcatel relating to (1) the requirements to integrate the Altimeter onto the LMSS baseline satellite for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and (2) the requirements to evaluate the performance of the algorithms for the retrieval of altimeter parameters, and

WHEREAS, the IPO will obtain their own import and export licensing from the Department of State as required, and

WHEREAS, Alcatel is under contract with the IPO to provide both the altimeter and its retrieval algorithms for environmental parameters, and

WHEREAS, the IPO will oversee and manage the NPOESS program.

WHEREAS, the IPO will obtain their own import and export licensing from the Department of State as required, and

WHEREAS, it is the intent of the IPO to provide the Altimeter to the contractor (LMMS or TRW) selected for the Engineering and Manufacturing Development phase of NPOESS, and

WHEREAS, the EMD contractor (LMMS or TRW) will by necessity share information with their subcontractors (HGCSD or Raytheon) for the Interface Data Processor Segment (IDPS) development and support, and

WHEREAS, Alcatel desire to receive technical data and defense services related to the integration of the Altimeter and its retrieval algorithms onto the LMMS baseline satellite designed for NPOESS,

WHEREAS, if LMMS wins the EMD phase of the contract they will buy the Altimeter directly from Alcatel.

NOW THEREFORE, the parties desire to enter into this Technical Assistance Agreement as follows:

1. This Technical Assistance Agreement is intended to enable HGCSD, as a sub-contractor to LMMS, to perform defense services and disclose technical data during the Program Definition and Risk Reduction (PDRR) Phase in support of the requirements to integrate the Altimeter sensor onto the baseline NPOESS satellites and to evaluate the requirements for the retrieval of environmental parameters from the Altimeter. This TAA is also intended to cover technical data and defense services exchanged during the proposal process for the Engineering and Manufacturing Development phase of the program.

There are several phases to the NPOESS program.

(i) The Development of Environmental Sensors

Beginning in 1997, the IPO issued contracts for the development of five major sensors that are to be integrated on future NPOESS satellites. An important element of the contracts is the ultimate delivery to the IPO of the sensor plus algorithms that allow environmental parameters to be retrieved from the remotely-sensed data. In addition the NPOESS Spacecraft will host a number of previously developed (leveraged) sensors. One of these sensors, the Altimeter is in development with Alcatel

As required, the IPO will obtain their own import/export licensing from DTC for the delivery of the Altimeter.

(ii) The Program Definition and Risk Reduction

LMMS is currently under contract - number #F04701-00-C-0501 - with the IPO. The contract is for the NPOESS Program Definition and Risk Reduction (PDRR) phase to provide a single, national polar-orbiting remote sensing capability to acquire, receive, and disseminate global and regional environmental data. HGCSD is a sub-contractor to LMMS for this effort. A similar competitive PDRR contract was awarded in December 1999 to TRW by the NPOESS IPO, and a down-select contract will be awarded to either LMMS or TRW for the Engineering and Manufacturing Development (EMD)/Production phase of the NPOESS program. One element of the PDRR contract is to reduce the risk of integrating the five NPOESS developed sensors and the leveraged sensors onto the baseline of the LMMS satellite. The PDRR phase will end on 30 March 2002 or, if an option to the contract is exercised, on 31 December 2002.

During this phase of the contract, LMMS will develop a baseline architecture for integrating all NPOESS sensors onto a satellite. In order to develop a viable baseline, LMMS, with the

assistance of HGCSD, will exchange information with Alcatel on the physical, electrical, mechanical, and thermal characteristics of the Altimeter.

Similarly, during the PDRR phase of the program, Alcatel will acquire information from LMMS and HGCSD relating to the satellite constraints for the physical mounting of the Altimeter. The outcome of the interchange will be a satellite design that incorporates the Altimeter in a manner that is feasible, economical, and optimizes overall performance.

The primary exchange of information to be carried our under this TAA will take place during the PDRR phase of the NPOESS program - namely from 1 May 2000 through 31 December 2002.

For further information, see attached Statement of Work.

(iii) The Proposal and Engineering and Manufacturing Development (EMD)/Production

Prior to the end of the PDRR phase, LMMS and its subcontractor, HGCSD, will begin preparing its proposal for the EMD phase of the NPOESS program. LMMS and HGCSD will need to exchange technical data and defense services with Alcatel to write a successful proposal. The EMD/Production phase will call for the building of three satellites with an option to build four additional satellites. Although the sensor complement for each of the satellites is variable, the plan is to purchase and incorporate an Altimeter sensor on three or four of the seven NPOESS satellites. If selected for the EMD phase, LMMS will amend its TAA with Alcatel to accommodate these additional tasks.

2. It is understood that this Technical Assistance Agreement is entered into as required under U.S. Government regulations and, as such, it is an independent agreement between the parties, the terms of which will prevail, notwithstanding any conflict or inconsistency that may be contained in other arrangements between the Parties on the subject matter.

3. The parties agree to comply with all applicable sections of the International Traffic in Arms Regulations (ITAR) of the U.S. Department of State and that, more particularly, in accordance with such regulations the following conditions apply to this Agreement:

I. ITAR 124.7

(1) Data to be exchanged includes that necessary to integrate an Altimeter instrument and its retrieval algorithms with an NPOESS baseline spacecraft. Such data includes the requirements for (1) spacecraft to instrument interface specifications, (2) test plans, procedures and resulting data specific to the instrument interface and instrument performance, and (3) interface drawings and analysis for instrument specific mechanical, thermal, electrical, data processing, flight software and fields-of-view analysis (optical, radio frequency, and thermal) (see attached A, Statement of Work).

All technical data and defense services transferred between Alcatel and HGCSD under this agreement pertains solely to the performance of retrieval algorithms and the interface between the LMMS architecture of the baseline spacecraft and the Altimeter instrument and does not represent a transfer of technical data or defense services specific to the design, manufacture, assembly or test of the NPOESS spacecraft itself. HGCSD will transfer to Alcatel software interface specifications pertaining to Altimeter specific flight software data processing and ground support. No HGCSD software code or algorithms will be exchanged.

As currently envisioned, HGCSD does not anticipate any requirement to export HGCSD owned hardware in connection with this agreement nor will HGCSD import or export Alcatel's hardware however, an Altimeter instrument and associated Alcatel-owned special test equipment may be returned to the NPOESS IPO during the EMD phase. Should such a need arise HGCSD will obtain the necessary DSP-5, DSP-61 or DSP-73 licenses as required.

(2) The technical assistance and data to be provided under this agreement includes all tasks associated with (1) the requirements for the Altimeter algorithms for the retrieval of environmental parameters, and (2) the specifications for receiving, inspecting, bench level testing, installing on the baseline spacecraft, aligning on the baseline spacecraft, functionally verifying the instrument-to-spacecraft interface via spacecraft level testing and storing. Additionally, HGCSD will assist Alcatel in establishing the methodology for the review of instrument level and spacecraft level interface test data and anomaly resolution as required.

(3) The agreement is valid through 31 December 2008.

(4) The effort intended to be accomplished under this agreement will take place in France, or the United States of America. There is no other country or area in which manufacturing, processing, sale or other form of transfer is to be licensed.

II. ITAR 124.8

(1) This Agreement shall not enter into force and shall not be amended or extended without the prior written approval of the Department of State of the U.S. Government.

(2) This Agreement is subject to all United States laws and regulations relating to exports and to all administrative acts of the U.S. Government pursuant to such laws and regulations.

(3) The Parties to this Agreement agree that the obligations contained in this Agreement shall not affect the performance of any obligations created by prior contracts or subcontracts which the Parties may have individually or collectively with the U.S. Government.

(4) No liability will be incurred by or attributed to the U.S. Government in connection with any possible infringement of privately owned patent or proprietary rights, either domestic or foreign, by reason of the U.S. Government's approval of this Agreement.

(5) The technical data or defense service exported from the United States in furtherance of this Agreement and any defense article which may be produced or manufactured from such technical data or defense service may not be transferred to a person in a third country or to a national of a third country except as specifically authorized in this Agreement unless the prior written approval of the Department of State has been obtained.

(6) All provisions in this Agreement which refer to the United States Government and the Department of State will remain binding on the Parties after the termination of the Agreement.

4. It is understood that disclosure of information by Alcatel to HGCSD is subject to any rules, restrictions or laws of France.

5. Technical data relating to this program may be exchanged Alcatel contractors/subcontractors provided that, prior to the release of any technical data, Alcatel executes a Non-Disclosure Agreement (NDA) with each company. The NDA will incorporate all of the provisions of the basic Agreement which refer to the U.S. Government and the Department of State (i.e., 22 CFR 124.8 and/or 124.9). Copies of the executed NDAs referencing this Agreement by number will be provided to and maintained by HGCSD for five years from the expiration of the Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed effective as of the day and year above provided.

Harris Corporation	**Alcatel Space Industries, France**
By _____	**By** _____
Printed Name _____	**Printed Name** _____
Title _____	**Title** _____
Date _____	**Date** _____

Attachment A

Statement of Work

STATEMENT OF WORK

Between

Harris Corporation,
Government Communications Systems Division

and

Alcatel Space Industries, France

For the

Altimeter

TABLE OF CONTENTS

1.0 INTRODUCTION

This Technical Assistance Agreement is intended to enable HGCSD to perform defense services and disclose technical data during the Program Definition and Risk Reduction (PDRR) Phase in support of the requirements to integrate the Altimeter sensor onto the baseline NPOESS satellites and to evaluate the requirements for the retrieval of environmental parameters from the Altimeter.

There are several phases to the NPOESS program.

(i) The Development of Environmental Sensors

Beginning in 1997, the IPO issued contracts for the development of five major sensors that are to be integrated on future NPOESS satellites. An important element of the contracts is the ultimate delivery to the IPO of the sensor plus algorithms that allow environmental parameters to be retrieved from the remotely-sensed data. In addition the NPOESS Spacecraft will host a number of previously developed (leveraged) sensors. One of these sensors, the Altimeter is in development with Alcatel

As required, the IPO will obtain their own import/export licensing from DTC for the delivery of the Altimeter.

(ii) The Program Definition and Risk Reduction

LMMS is currently under contract - number #F04701-00-C-0501 - with the IPO. The contract is for the NPOESS Program Definition and Risk Reduction (PDRR) phase to provide a single, national polar-orbiting remote sensing capability to acquire, receive, and disseminate global and regional environmental data. HGCSD is a sub-contractor to LMMS for this effort. A similar competitive PDRR contract was awarded in December 1999 to TRW by the NPOESS IPO, and a down-select contract will be awarded to either LMMS or TRW for the Engineering and Manufacturing Development (EMD)/Production phase of the NPOESS program. One element of the PDRR contract is to reduce the risk of integrating the five NPOESS developed sensors and the leveraged sensors onto the baseline of the LMMS satellite. The PDRR phase will end on 30 March 2002 or, if an option to the contract is exercised, on 31 December 2002.

During this phase of the contract, LMMS will develop a baseline architecture for integrating all NPOESS sensors onto a satellite. In order to develop a viable baseline, HGCSD as a sub-contractor to LMMS, will exchange information with Alcatel on the physical, electrical, mechanical, and thermal characteristics of the Altimeter.

Similarly, during the PDRR phase of the program, Alcatel will acquire information from HGCSD and LMMS relating to the satellite constraints for the physical mounting of the Altimeter. The outcome of the interchange will be a satellite design that incorporates the Altimeter in a manner that is feasible, economical, and optimizes overall performance.

The primary exchange of information to be carried our under this TAA will take place during the PDRR phase of the NPOESS program - namely from 1 May 2000 through 31 December 2002.

(iii) The Proposal and Engineering and Manufacturing Development (EMD)/Production

Prior to the end of the PDRR phase, HGCSD will begin preparing its proposal for the EMD phase of the NPOESS program. HGCSD will need to exchange technical data and defense services with Alcatel to write a successful proposal. The EMD/Production phase will call for the building of three satellites with an option to build four additional satellites. Although the sensor complement for each of the satellites is variable, the plan is for LMMS to purchase and incorporate an Altimeter sensor on three or four of the seven NPOESS satellites. If selected for the EMD phase, LMMS will amend its TAA with Alcatel to accommodate these additional tasks.

2.0 SCOPE

The scope of this effort during the PDRR phase of the LMSS/MSSO contract with the IPO will require LMMS to exchange technical data and provide defense services to Alcatel Space Industries that is necessary for the development of the Altimeter. HGCSD will support LMMS in this effort. The Altimeter is currently under development by Alcatel. This TAA will enable HGCSD, LMMS and Alcatel to disclose technical data and provide defense services in support of (1) the integration of the Altimeter instrument onto the baseline architecture of the LMMS satellite that is proposed for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) and (2) the evaluation of the Altimeter algorithms for the retrieval of environmental parameters and will also enable HGCSD and LMMS to prepare its proposal for the EMD phase of the program.

3.0 OBJECTIVE

The objective of the efforts is to exchange technical date and provide defense services associated with installing the Altimeter on an LMMS baseline spacecraft. The work includes information on the requirements for (1) the alignment of the Altimeter on the spacecraft, (2) functionally verifying the instrument-to-spacecraft interface and (3) HGCSD work in verifying the performance to retrieve environmental data from simulated Altimeter data.

Such technical data to be exchanged includes, but is not limited to (1) spacecraft to instrument interface specifications, (2) test plans and procedures specific to the instrument interface and instrument performance, (3) interface drawings and analysis for instrument specific mechanical, thermal, electrical, data processing, flight software and fields-of-view analysis (optical, radio frequency, and thermal), and (4) algorithms for the retrieval of environmental parameters.

4.0 TASK DESCRIPTIONS

The following services and technical data are required in order to support (1) the integration of the Alcatel Altimeter instrument on the baseline architecture of the LMSS/MSSO satellite for the NPOESS program and (2) the evaluation of the algorithms for the retrieval of environmental parameters.

4.1 Interface Specifications and Drawings Applicable to Altimeter

4.1.1 Description

Review all Alcatel Altimeter inputs to the draft Unique Instrument Interface Control Document (ICD) and the General Instrument Interface Specification (GIIS).

The task will include the following:

- Review the Alcatel inputs to the Interface Control Documents and confirm that the Interfaces are compatible with the baseline architecture of the LMMS NPOESS satellite,
- Review all interface drawings and analyses prepared with joint input by HGCSD, LMMS and Alcatel applicable to Altimeter; these include:
  - Mechanical interfaces,
  - Thermal interfaces,
  - Electrical interfaces,
  - Fields-of-view (optical, thermal, and radio frequency), and spacecraft configuration

4.1.2 Approach

- HGCSD will assist LMMS who will analyze all Altimeter interface documents and ensure that the interfaces are consistent with the requirements of the LMMS NPOESS satellite
- HGCSD and LMMS will interface directly with Alcatel personnel to resolve any discrepancies between the proposed Altimeter interfaces and the LMMS satellite
- HGCSD and LMMS will document their evaluation of the interface documents

4.1.3 Schedule

The review of the interface documents will occur between May and December of 2000. ***??? if this is true, and we are not part of this first task, then this task should be deleted from agreement.***

4.2 Test Plans and Procedures Applicable to Altimeter

4.2.1 Description

Review all Alcatel Altimeter test plans and procedures that are applicable to Altimeter

The task will include the requirements for the following tests and procedures:

- Instrument bench tests
- Spacecraft interface tests
- Spacecraft level tests
- Spacecraft environmental tests
- Altimeter instrument installation procedures

4.2.2 Approach

- LMMS will analyze all proposed test plans and procedures that relate to the integration of the Altimeter onto an LMMS satellite
- LMMS will interface directly with Alcatel personnel to resolve any discrepancies between the proposed Altimeter tests and LMMS standard procedures
- LMMS will document their evaluation of test procedures

4.2.3 Schedule

The review of the interface documents will occur between May 2000 and March of 2001.

4.3 Software Specifications applicable to Altimeter

4.3.1 Description

Review Alcatel software specifications applicable to Altimeter

The task will include reviews of the following software specifications:

- Specifications of the ground processing of the Altimeter sensor data
- Interface specific flight software specifications

4.3.2 Approach

- HGCSD will analyze the specifications of the ground processing of data received from the Altimeter instrument
- HGCSD will review and analyze the software specifications for flight software between the Altimeter instrument and the LMSS/MSSO baseline satellite

4.3.3 Schedule

The review of the interface documents will occur between May 2000 and December 2001.

4.4 Host or Attend Meetings for the Exchange of Technical Altimeter Data

4.4.1 Description

Attend technical interchange meetings involving Altimeter

The task will include participation in the following types of reviews

- Design reviews
- Technical Interchange Meetings (TIMs)
- Test support reviews
- Altimeter and LMMS satellite baseline data
- On-orbit anomaly review and resolution

4.4.2 Approach

- At the request of the LMMS, HGCSD will attend reviews and technical interchange meetings that are required to coordinate the integration of the Altimeter sensor onto an LMMS baseline spacecraft.

4.4.3 Schedule

Interface meetings between HGCSD, Alcatel and LMMS will occur between May 2000 and December 2002.

5.0 DELIVERABLES

Reports of the major interchange meetings will be delivered to LMMS for further delivery to the NPOESS IPO within 30 days of each meeting. The first meeting is scheduled no earlier than *May 2000.* Subsequent interchange meetings are planned at approximately six-month intervals through December 2002.